Progress Report on Fate and Transport/Food Web Modeling Approaches

[June 13, 2006 Version from Carl Stivers]

Status.

- Objectives for Fate and Transport modeling were discussed and preliminarily agreed upon on May 2. These objectives were refined on June 6 and will receive final EPA review and agreement at the June 12 meeting.
- A compromise approach for fate and transport modeling was preliminarily agreed to on May 17 and further refined on June 6.
- The compromise approach uses the LWG developed EFDC model to generate water and sediment fluxes that will inform the EPA (currently draft) combined fate and transport/food web model. This is referred to as the "Hybrid Model".
- The food web portion of the Hybrid Model will be refined for consistency with previous LWG efforts and outstanding EPA comments and used for assessments needed for the Round 2 Report (i.e., development of PRGs).
- The species and chemicals to be included in the application of the food web model for development of PRGs in the Round 2 Report were agreed upon at the June 6 meeting.
- The spatial scale (site wide) for calibration of the food web model for its use in development of PRGs for the Round 2 Report was also agreed upon. Whether a different scale or scales will be required for its use during the feasibility study phase of the project will be discussed at a later time.
- Other modeling tools may be used to meet other fate and transport modeling objectives.

Issues.

There are no major outstanding issues to resolve. The details of the modeling approach will be determined following the schedule outlined below.

Next Steps.

- Provide table of preliminary COPCs for Food Web Model or BSAF approach to EPA as soon as possible. Work with EPA Partners on refining Food Web Model (e.g., set up, function) for use in Round 2 Report.

- The tentative schedule for developing and refining the Hybrid Model is:
  1. Through September – EPA and LWG jointly develop concept, architecture, linkage logistics, and modeling scenarios for Hybrid Model. Agree on final architecture and parameterization for food web portions in time for Round 2 Report development.
  2. a. Mid-October – Calibration of EFDC model completed.
  2. b. Mid-October – Complete preliminary Hybrid Model runs using non-calibrated EFDC outputs. Identify Round 3B data gaps during this step.
  3. December – Complete preliminary Hybrid Model runs using outputs of calibrated EFDC model for "typical" river conditions (e.g., calibration/validation period conditions).
  4. March 2007 – Complete full integration of Hybrid Model and final baseline runs of Hybrid Model for a range of river conditions and provide Technical Memo on accuracy and ability of model to be used for FS alternative evaluations. Possible additional 3B data gaps identified here.

- EPA review of the Hybrid Model will be on Step 4 technical memo.
- The completed Hybrid Model would then be used in the evaluation of long term outcomes of remedial alternatives during the FS development in late 2007.
- EPA and LWG Managers will to consider what is (to them) acceptable model performance for use in determination of acceptable chemical concentrations in sediment (for PRGs, FWM only) and for supporting remedial action decisions (Hybrid Model), and identify an appropriate point at which further data collection is no longer reasonably expected.